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Rural Financial Markets

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Introduction

There is general agreement that in early stages of development, most low income countries must rely heavily on agriculture for economic surpluses to capitalize their economies. Much less agreement is found on questions about the magnitudes of agricultural savings capacity, and on how surpluses can be most efficiently mobilized. There are at least four resource mobilization techniques which have been used widely: central planning, fiscal measures, inflation and financial markets.^{1/} Most policy makers emphasize the first three techniques which involuntarily draw surpluses out of rural areas. Only a handful of countries have stressed mobilization of voluntary household savings through rural financial markets. In part, policy makers have ignored voluntary household savings because of widely held assumptions about rural household saving behavior. It has been assumed that rural households are too poor to save, and that those which do acquire additional income spend the windfalls on consumption or ceremonial sprees.

It will be argued in the following discussion that these assumptions may be incorrect, that substantial voluntary rural household savings capacities may exist, and that household savings behavior may be strongly influenced by rural financial markets. The discussion opens with remarks about the importance of household savings, a brief outline of the household decision making process which determines savings behavior, and a few comments on how rural financial markets relate to household behavior. This is followed by a review of evidence on the extent of rural household savings capacities. The discussion concludes with an examination of the benefits which might result from mobilization of voluntary rural financial savings, and a few suggestions on savings mobilization strategies.

Household Savings Decisions

Relatively little is known about rural household savings behavior in low income countries. The aforementioned assumptions about rural savings behavior have deflected analysis from this topic. Exacting data requirements, the large number of heterogeneous decision making units involved, the complexity of the household decision making process, and inadequate theoretical models of household saving behavior have also hindered analysis. In most studies, household savings are left in the background while emphasis is placed on government, corporate, and aggregate savings performances.^{2/} It is easy to overlook the fact that household savings often make up the largest part of aggregate savings in market oriented economies. An ECAFE study of

seven countries in Asia, for example, showed that household savings made up half to two-thirds of total savings.^{3/} Recently, several economists have argued that household savings, as well as aggregate savings, may be intimately related to financial market policies.^{4/} They argue that financial markets influence the forms in which savings are expressed, as well as the total amount of potential consumption which is diverted to savings. This influence can be better understood after the various dimensions of the rural household decision making processes are clarified.

A large number of studies have been done on farmer's production activities, and on rural household consumption and household investment-savings activities. In most cases, however, the farm firm and the household are studied independently. Only a handful of researchers have attempted to develop an integrated model of the farm-firm-household.^{5/} This integrated model must include at least three major interrelated sets of activities: production, consumption, and savings-investment. The production activities (P_{is}) may be carried out within the farm firm, in some non-farm enterprise owned by the household, or within the household itself. Some of the inputs which go into these production activities may be supplied directly by the household, others may be purchased with the household's own financial resources, while still others might be purchased with borrowed money or received through barter. The selection of a particular production activity and associated inputs will largely depend on the resource endowment of the firm-household and profit potentials.

Typically, a complex set of consumption activities (C_{is}) take place along with the P_{is} . Some of the goods consumed may be drawn directly from the P_{is} . Additional goods may be purchased with owned or borrowed money, while still other consumption goods may be received in exchange for products or services. Some of the benefits from C_{is} such as education, health expenditures, and acquisition of consumer durables will be realized by the household over several time periods: the C_{is} may include a saving-investment component. Overall, the C_{is} are limited by the amount of income generated by the P_{is} , earnings from assets not involved in P_{is} , the wealth position of the household, and the ability of the firm-household to borrow.

The firm-household's savings-investment activities (S_{is}) may be fewer in number, but more complex than either the P_{is} or the C_{is} . The complexity is largely due to the uncertainties associated with the stream of future income expected from the savings-investments. A number of these S_{is} are involved in the P_{is} : investments in durable inputs such as land, land improvements, tractors, livestock and building; savings directed toward expanding operating expenses of the firm; and investments made in non-farm production activities. As suggested earlier, savings-investments may be made in household goods. Savings can also be expressed in various types of financial forms or non-productive assets. The exact makeup of the S_i portfolio held by the household will depend on household preferences, the security, liquidity, and availability of the particular S_i , and the expected net rates of return from the S_{is} .

The dimensions of the firm-household decision making process are easy to specify, but the interactions between the various dimensions over time are difficult to quantify when a number of P_{is} , C_{is} , and S_{is} change together. For example, the effects on household decisions of a real increase in interest rates paid on financial savings are hard to sort out when household incomes move up and down, rates of return on P_{is} and other S_{is} may be jumping around, and attractive new C_{is} may become available to the household. In addition, the makeup of the household may be changing substantially. This is further complicated by the fact that causal relationships between some elements in the various dimensions may run two ways. For example, increases in household income may cause some C_{is} to increase. At the same time, the availability of new attractive consumer durables such as refrigerators, motor bikes, radios, and television sets may induce a household to work longer hours to generate the income to purchase same. Despite these messy methodological problems, one would expect to find a close inverse relationship, other things being equal, between the average rates of return the household expects to receive from its S_{is} , and the proportion of income allocated to the C_{is} .

Role of Rural Financial Markets

Rural financial markets (RFM's) may influence household behavior in several ways. On the one hand, RFM's may augment the household's liquidity pool through credit.^{6/} This additional liquidity allows the firm-household to use more inputs in the P_{is} and may increase the net income of the household from these activities. This

increased income expands the household's savings capacity. The additional liquidity also allows households to even out consumption activities which would otherwise be disturbed by uneven income flows. Credit further allows households to make lumpy purchases of consumer durables and large productive capital goods. When negative real rates of interest are charged on loans, the household may also receive an income transfer through the borrowing process.

On the other hand, RFM's may provide the households with additional S_{is} by offering various types of financial savings instruments. If these instruments provide positive real returns to the household, they may induce the household to convert some of its excess liquidity into financial savings. This may increase the average rate of return realized by the household on its savings portfolio and induce the household to divert more of its income toward S_{is} .

Evidence on Rural Savings Capacities

At this point, two major questions might be raised. The first is, how strong is the relationship between the rates of return expected on various S_{is} , especially on financial S_{is} , and consumption decision in the household? Unfortunately, there is little quantitative evidence available on these relationships. The second question is, do rural households in low income countries have a significant savings capacity? Although sketchy and scattered, quite a bit of data is available to answer this question. Some detailed information on average propensities to save of rural households in five countries follows. Additional information on rural savings behavior from a handful of other countries is also briefly summarized.

Taiwan evidence: Recently completed studies in Taiwan provide a fairly comprehensive review of rural savings capacities during the past decade-and-a-half. Three factors make the Taiwan case useful for analysis of savings behavior: first, very high quality, detailed information is available on rural firm-household C_{is} , S_{is} , and P_{is} . Second, analysis is facilitated by significant changes in income and consumption among rural households over the past several decades. Third, Taiwan is one of only a handful of countries which has promoted a voluntary savings mobilization program. Over the last three decades policy makers in Taiwan have used interest rate adjustments on savings deposits as an anti-inflation technique. Over the period 1953 to 1970, the real rates of interest paid on time deposits were negative in only two years, 1953 and 1960. That is, the nominal interest rate paid on deposits generally exceeded the rate of inflation. Savers could expect to receive a positive real rate of return on their time deposits of 5 to 6 percent over the 1953 to 1970 period.^{7/} These attractive interest rates drew substantial savings deposits into Farmers' Associations and Postal Savings facilities. From 1954 to 1970 the value of financial deposits in Farmers' Associations increased from the equivalent of less than \$6 million U.S., to over \$124 million U.S. The deposits in the associations in some periods exceeded the value of loans made, and funds were transferred to other parts of the economy through financial channels.^{8/}

The average propensities to save (APS) shown in Table 1 are drawn from very reliable data collected by a farm record keeping

project in Taiwan. The households included in the project have incomes and farm sizes somewhat larger than the average Taiwanese farmer.^{9/} The resulting upward bias in APS was partially offset by defining purchases of all consumer durables and expenditures on health and education in the analysis as purely current consumption. It can be noted in Table 1 that the APS for all households included in the project ranged from .19 to .31 over the 1960 to 1974 period. (The average propensity to save is defined as the ratio formed by subtracting the total annual value of household consumption from total net household income and dividing by total net household income.) It can also be noted in the table that APS's among even the smallest farm size groups were surprisingly large.

Additional analysis of the farm record keeping data in Taiwan showed that household savings activities were related to rates of return on farm assets.^{10/} Households saved more when they had profitable investment possibilities.

Japanese evidence: Although currently not a low income country, Japanese rural household data does provide additional insights into savings behavior among households with small farms. As Kato has shown, since the early 1920's, agricultural cooperatives in Japan have mobilized financial savings well in excess of the amount of agricultural loans extended by the cooperatives.^{11/} A large part of these excess funds moved out of the rural sector through the financial markets.

The average propensities to save shown in Table 2 were calculated from data collected annually by the Japanese Farm Household

Economy Survey. (The ratios shown are total disposable household income minus gross household expenditures divided by total disposable household income.) Because of the surveying techniques used, household income is probably underreported. The ratios are, therefore, conservative estimates of actual household savings capacities. Despite this, the APS's for the average household in the period 1950 to 1973 were impressive, ranging from .10 to .22. Especially after 1960, the savings performance of households with very small farms was most impressive. In part, this is due to rapid increases in household income from off-farm sources.

Other household studies of rural consumption-savings behavior in Japan confirm the substantial APS's given in Table 2.^{12/} Without exception, these studies show that rural households in Japan have had high average as well as marginal propensities to save for a number of decades. These studies also suggest that substantial incentives to save and invest may have played an important role in stimulating these savings.

Korean evidence: In September, 1965, the Korean Monetary Board approximately doubled the rates of interest applied to loans and time deposits. Nominal interest rates on time deposits were raised to 30 percent per year. This resulted in real rates of interest in excess of 8 percent being paid on financial savings from 1965 to 1971.^{13/} These financial reforms resulted in very large increases in the amounts of financial savings. Total time and savings deposits in all banks jumped from only 39 billion won in 1964 to 366 billion in 1968.^{14/} Financial deposits in agricultural cooperatives increased

at about the same rate.^{15/} The number of savings accounts also increased sharply during this period. At least part of this increase in financial savings appears to be due to the much higher interest rates paid to savers.

Rural household savings behavior in Korea has not been analyzed in detail, but some interesting information is available. The data in Table 3 were drawn from annual farm household surveys carried out by the Ministry of Agriculture and Fisheries. Again, the figures shown in the table are average propensities to save calculated by dividing total farm household net surplus by total net household disposable income. As can be noted in the table, the average APS for all households ranged from .04 in 1965 to .33 in 1974. As in the Taiwanese and Japanese data, APS's among households with small farms were surprising large. It is particularly noteworthy that APS's increased substantially from 1965 to 1974. Part of this increase was undoubtedly due to expanded incomes and farm policies which increased the returns to on-farm investments. It is also possible that part of the increased saving was due to the more attractive incentives provided households by financial markets.

Malaysian evidence: A cross-sectional study of household savings activities carried out in the mid-1960's in West Malaysia provides some additional evidence on rural savings capacities. Approximately 60 percent of the 5,147 households surveyed were in rural areas. Although the survey techniques used probably resulted in underreporting of incomes, the APS's shown in Table 4 suggest that significant savings capacity exists among the surveyed rural

households. It further shows that APS's increase rapidly among farm operators and fishermen as their incomes increase.

Indian evidence: A large number of studies on rural savings have been done in India.^{16/} In general, they show smaller savings capacities than noted for Taiwan, Japan and Korea. This is due, in part, to lower incomes in rural areas of India. One might also argue that rural people in India have less incentives to save: on-farm investments in many areas yield low returns, and badly fragmented financial markets do not offer savers positive real rates of return.

Despite these less favorable savings conditions, information from studies in the Punjab of India show that savings capacities rapidly expanded there during the late 1960's. Table 5 gives APS's for a group of 180 farm households in two districts of the Punjab for four crop years, 1966-1970. These are prosperous areas which benefited substantially from changes in agricultural technology during the 1960's. As can be noted, the average household saved or invested 12 to 37 percent of their incomes. In some years savings capacities among even the smallest farm-size groups were quite high.

On the basis of household level studies in another state of India, Desai and Desai found very substantial savings in households experiencing income increases.^{17/} They report marginal propensities to save of .29 and .63 for two groups of rural households.

Other evidence: Bits and pieces of information from a handful of other countries tend to support the conclusion that significant amounts of voluntary savings capacity may exist in rural areas of low

income countries. During the latter part of the 1960's, for example, the University of Nottingham did intensive case studies of 239 households in Zambia.^{18/} Households were visited on a regular basis over a two year period and detailed accounts were kept on important economic activities. On the average, these accounts showed that the rural households included in the program were saving more than 30 percent of their income.

A few years ago, coffee cooperatives in Kenya began to deposit member's receipts from sale of coffee in unblocked savings accounts.^{19/} The leaders of the cooperatives have been very surprised by the large amounts which have been left on deposit for long periods. Recently, deposits in these cooperatives substantially exceeded the volume of funds lent by the cooperatives. Success in developing rural savings clubs in Zambia, Lesotho, Rhodesia and Malawi, and mobilization of savings through postal savings, savings banks, and credit-savings unions in many parts of Africa provide further evidence on rural savings capacities in Africa.^{20/} A recent study of household consumption-savings in a rural area of Ethiopia showed APS's ranging from .11 to .14.^{21/} The author of this study stresses that these are conservative estimates of savings since household incomes in the study were likely underreported.

Advantages from Voluntary Mobilization of Rural Savings

At this point, a skeptic might argue that even if some voluntary savings capacities do exist in rural areas, they are too costly to mobilize via financial markets, and that other resource mobilization techniques are more efficient. There are at least three strong reasons

for stressing voluntary rural financial savings. The first reason is that they may be important to overall strengthening of financial markets. Until recently, most economists assumed that financial markets played a neutral role in development. This view recently has been challenged by a handful of authors.^{22/} Based largely on the Korean and Taiwan experience, it is argued that proper financial policies can provide some fundamental developmental pulses. These authors stress the importance of proper interest rate policies, along with mobilization of financial savings, in integrating and substantially strengthening financial markets in general.

A second reason is that mobilization of financial savings might play an important part in strengthening local service organizations. For a number of years many less developed countries have tried to bridge the institutional gap in rural areas between national service organizations and the individual by building cooperatives and farmers associations. In many respects, it is fortunate that these local organizations have been "bio-degradable!" Otherwise, the landscape in most LDC's would be littered with defunct cooperatives and burned out farmers associations. Despite some modest success in a few countries, the experience with building these intermediate service organizations has been very disappointing. A number of these intermediate organizations have been asked to provide financial services, mainly credit, to their members. Typically, these loans are granted at concessional rates of interest. These rates are almost always below the opportunity costs of capital in the economy, below the going commercial rate of

interest in the money market, and often below the rates charged on regular agricultural loans made by banks. Further, in a number of cases the rates of interest which these organizations are allowed to charge are well below the rate of inflation. These concessional interest rates weaken the intermediate organization in several ways. The availability of concessionally priced credit, for example, makes the intermediate organization vulnerable to intrigue.^{23/} Low interest rates force intermediate organizations to ration "bargain credit." These non-market rationing decisions are highly exposed to various types of personal influence, political persuasion, and outright corruption. In addition, concessional interest rates on credit almost always force an intermediate organization to concentrate its loans in the hands of relatively few borrowers. Part of this is due to intrigue, but part is also due to internal financial pressures. With excess demand for loanable funds at concessional interest rates, agencies minimize lending costs by concentrating loans in the hands of relatively few borrowers. The lament that the large farmer captures most of the concessionally priced cooperative credit can be heard around the world.

The intrigue and the loan concentration process have obvious deleterious effects on the willingness of non-recipients of the bargain credit to participate in the intermediate organization. Further, concessional interest rates on credit make it next to impossible for intermediate organizations to maintain, let alone expand, the real value of loanable funds. This is due to capital erosion caused by inflation and inability to offer sufficient interest rate incentives

to induce members to voluntarily deposit funds in the organization. These two factors seriously undercut the ability of an intermediate organization to expand and integrate itself into the national financial system. Cooperatives and farmers associations are forced to live the uncertain life of a mediant whose sustenance must come from beneficent central banks or foreign aid agencies. Mobilization of voluntary savings might allow these intermediate organizations to develop a much larger degree of independence and self sufficiency.

A third major reason for mobilizing financial savings is the favorable impact it has on discouraging household consumption. The incentives to save provided by financial markets can be strong inducements for households to defer consumption. It is little wonder that financial institutions in rural areas of Colombia, India, the Philippines, Kenya and Ethiopia, for example, attract very few savings deposits when they offer negative real rates of interest on deposits. These rates encourage, rather than discourage consumption.

A Savings Mobilization Strategy

If financial markets are to play a positive role in the resolution of rural poverty, some fundamental changes in policies in most low income countries will be necessary. Current policies are resulting in badly fragmented financial markets, in heavy concentration of concessionally priced credit in the hands of relatively few people, in unprofitable financial operations in many rural cooperatives, and in little or no positive incentive for rural households to defer consumption. Overall, these financial policies are very regressive: the relatively well-off benefit from the concessionally priced credit, and

the poor are denied access to production credit as well as remunerative savings instruments. Furthermore, perpetuation of fragmented financial markets results in too little honest competition between formal and informal financial markets. Under these conditions, some informal credit sources are able to continue to extract monopoly profits from small borrowers who are denied access to formal markets. A rationalization of financial market policies combined with aggressive saving mobilization programs would eliminate part of these undesirable features.

A savings mobilization effort must be carried out at two levels. Some changes must be made at a national level before substantial voluntary savings can be mobilized. In general, these changes include a higher and more flexible interest rate structure. Where rates of inflation are above 15 to 20 percent per year, savings instruments might be value-linked so that the savings principal is tied to price adjustments. Additional inducements might also include tax exemptions on interest payments made on certain kinds of savings deposits.

It is often necessary to institute legal changes so that cooperatives and other local organizations can legally handle credit and savings activities. In some cases it might also be necessary to adjust some laws and administrative procedures so that these local organizations can be integrated into regular financial markets. Bonding services for employees who handle financial activities would also be helpful. In addition, nationwide deposit insurance programs such as currently found in the United States, the Philippines, and Uganda are needed to assure savers of secure deposits.

At this point, a reader might comment that raising interest rates is great in theory, but politically impossible to carry out. Some politicians view concessionally priced credit as a way of buying political support. They forget, however, that cheap credit policies lead to cheap savings policies and, further, that only those who receive concessionally priced credit realize its benefits. More votes will be positively influenced by high rates-of-return on savings deposits, combined with wider availability of credit, than will be bought by concessionally priced credit which is handed out to only a few.

Where at least part of the above mentioned conditions are present it is possible to initiate savings mobilization programs. Fortunately, many of the less developed countries have at least a partial set of institutions already in place which can handle financial savings. In many countries including the Dominican Republic, Costa Rica, the Philippines, India and Bangladesh a number of banks already provide financial services in many rural areas. Postal savings offices, cooperatives which handle credit, and credit-savings unions dot much of the landscape in many other parts of the less developed world. A local savings mobilization effort, therefore, need not concern itself primarily with constructing new financial institutions. Initially, major emphasis should be placed on getting a balanced and economically sound set of financial activities in the institutions which already exist.

The exact makeup of savings mobilization programs will vary from area to area. These programs might include various combinations

of the following components: in some cases various types of forced savings programs may already be underway, or appropriate to initiate. Required share purchases in an organization, compensatory balances, regular contractual savings, and even depositing cash receipts in an unblocked savings account may be stressed in the start-up phase of a savings mobilization program. The mobilization efforts, however, should begin early to stress voluntary savings incentives. If the Taiwan, Korean and Japanese experiences are representative of what might occur under proper conditions, these voluntary savings could soon make up the bulk of the savings mobilized.

As has already been mentioned, the key element in a savings mobilization program is the attractiveness of the reward paid on savings. Convenience, liquidity, and security of the savings, however, strongly complement the return paid. Where legal, a lottery attached to savings deposits may also promote additional interest in voluntary savings. A large number of countries including Egypt, Sweden, Tunisia, Colombia, Russia, El Salvador, Iran, France and India already have some type of drawing associated with savings accounts. Cash as well as merchandise bonuses can also be provided to depositors. In a few cases, a life insurance option tied to savings deposits might also strengthen the incentive to save. This has been a popular feature in some credit-savings cooperatives in Latin America.

Any savings mobilization effort will work better where rapid agricultural growth and increasing rural incomes are occurring. A national savings program should, therefore, initially stress savings

promotion in areas where agriculture is on the move. Above all, irregardless of where the program is started, it should be strongly supported and promoted. This includes rewards and recognition for successful organizations and managers.

A Concluding Comment

Development from below appears to be the only way to effectively reach rural poor. The savings program briefly outlined above might be a first step in a bootstrap approach to rural development in low income countries. It would stimulate rural poor to increase their own capital base, it would provide a more healthy environment for local organizations to grow, and it would allow local financial institutions to integrate with regular financial markets. Current financial market policies in most LDC's are an unmitigated disaster for most rural poor. It is past time for making policy adjustments so that rural poor are more fairly treated by this most important development instrument.

-Footnotes-

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¹ John G. Gurley, "Financial Structures in Developing Economies," in Fiscal and Monetary Problems in Developing States, ed. David Krivine, (New York: Praeger, 1967), pp. 99-117.

² Allen C. Kelley and Jeffrey C. Williamson, "Household Saving Behavior in the Developing Economies: The Indonesian Case," Economic Development and Cultural Change, 16(April 1968), p. 385.

³ United Nations, ECAFE, Economic Bulletin for Asia and the Far East, Vol. XIII, No. 3, December 1962, pp. 1-12.

⁴ For example see: Ronald I. McKinnon, Money and Capital in Economic Development, (Washington, D.C.: Brookings Institution, 1973); Edward S. Shaw, Financial Deepening in Economic Development, (New York: Oxford University Press, 1973); U. Tan Wai, Financial Intermediation and National Savings in Developing Countries, (New York: Praeger, 1972); and Hugh T. Patrick, "Financial Development and Economic Growth in Underdeveloped Countries," Economic Development and Cultural Change, 14(January 1966), pp. 174-189.

⁵ For example see: Toshiyuki Mizoguchi, "An Econometric Comparison of Farm Households: Economic Behavior in Japan, Korea and Taiwan," The Developing Economies, 11(September 1973); pp. 231-243, and Chihiro Nakajima, "Subsistence and Commercial Family Farmers: Some Theoretical Models of Subjective Equilibrium," in Subsistence Agriculture and Economic Development, ed. Clifton R. Wharton, Jr., (Chicago: Aldine Publishing Company, 1969), pp. 165-185.

⁶ John A. Hopkins and others, Financial Management in Agriculture, (Danville, Illinois: Interstate Printers, 1973), p. 138.

⁷ See the following for more details on Taiwan's interest rate policies: Chyau Tuan, "Determinants of Financial Savings in Taiwanese Farmers' Associations 1960 to 1970," (Ph.D. dissertation, Ohio State University, 1973), and R. J. Irvine and R. F. Emery, "Interest Rates As An Anti-Inflationary Instrument in Taiwan," The National Bank Review, 4(September 1966), pp. 29-39.

⁸ For more details refer to: Dale W Adams and others, "Rural Capital Markets and Small Farmers in Taiwan 1952-1972," Small Farmer Credit in East Asia, Vol. 11, A.I.D. Spring Review of Small Farmer Credit, (Washington, D.C.: Agency for International Development, 1973).

⁹ Refer to the following for more income and consumption details on these households: Marcia Min-ron Lee Ong, "Changes in Farm Level Savings and Consumption in Taiwan 1960-1970," (Ph.D. dissertation, Ohio State University, 1972); and Dale W Adams and others, "Changes in Rural Purchasing Power in Taiwan, 1952-1972," Food Research Institute Studies, 14(1975), pp. 127-145.

¹⁰ See Truong Quang Canh, "Income Instability and Consumption Behavior: A Study of Taiwanese Farm Households 1964-1970," (Ph.D. dissertation, Ohio State University, 1974).

¹¹ Yuzuru Kato, "Mechanisms for the Outflow of Funds from Agriculture into Industry in Japan," Rural Economic Problems, 3(December 1966), pp. 1-20.

¹² For example see: Tuvia Blumenthal, Savings in Postwar Japan, (Cambridge: Harvard University Press, 1970); Toshiyuki Mizoguchi,

"Consumption Functions and Savings Functions for the Japanese Farmer's Families in the Post-War Japan," Rural Economic Problems, 4(December 1967), pp. 20-35; Tsutomu Noda, "Savings of Farm Households," in Agriculture and Economic Growth: Japan's Experience, ed. K. Ohkawa and others, (Tokyo: University of Tokyo Press, 1970), pp. 352-373; and Miyoei Shinohara, "The Structure of Savings and the Consumption Function in Postwar Japan," The Journal of Political Economy, 67(December 1959), pp. 589-603.

¹³ Additional details on this policy change are provided by Gilbert T. Brown, Korean Pricing Policies and Economic Development in the 1960's, (Baltimore: Johns Hopkins Press, 1973).

¹⁴ Economic Planning Board, Republic of Korea, Korea Statistical Yearbook 1969, (Seoul, Korea: Economic Planning Board, 1969), p. 342.

¹⁵ Robert B. Morrow and Paul E. White, "Farm Credit in Korea," Small Farmer Credit in East Asia, Vol. 11, A.I.D. Spring Review of Small Farmer Credit, (Washington, D.C.: Agency for International Development, 1973).

¹⁶ For example refer to: P. G. K. Panikar, Rural Savings in India, (Bombay: Somaiya Publications, 1970); Balbir S. Sahni, Savings and Economic Development, (Calcutta: Scientific Book Agency, 1967); the Indian Economic Journal, Vol. 17, 1970, and the Indian Journal of Agricultural Economics, 30(July-September 1975), pp. 1-82, which have a number of articles on household savings.

¹⁷ B. M. Desai and D. K. Desai, "Potentialities for Mobilizing Investible Funds in Developing Agriculture," unpublished study, Centre for Management in Agriculture, Indian Institute of Management, Ahmedabad, India, 1971.

¹⁸ For further details see: R. A. J. Roberts, "The Role of Money in the Development of Farming in the Mumbawa and Katete Areas of Zambia," (Ph.D. dissertation, University of Nottingham, 1972).

¹⁹ Reported by J. D. von Pischke, "Farm Credit in Kenya: The Poor Farmer Paradox," unpublished study, Institute for Development Studies, University of Nairobi, September 10, 1973.

²⁰ See C. J. Howse, "Agricultural Development Without Credit," Agricultural Administration, 1(1974), pp. 259-262; and Giordano Dell'Amore, The Mobilization of Savings in African Countries, (Milan: Cassa di Risparmio delle Provincie Lombarde, 1971).

²¹ Johan Holmberg: "Survey of Consumption Patterns in Etheya Extension Areas," CADU Publication No. 90, Chilalo Agricultural Development Unit, Addis Ababa, Ethiopia, October 1973, p. 96.

²² See Brown, McKinnon, Patrick, Shaw and Wai.

²³ For further discussion, refer to Claudio Gonzalez-Vega, "Interest Rate Policies and Small Farmer Credit Programs in LDC's," Small Farmer Credit Analytic Papers, Vol. 19, A.I.D. Spring Review of Small Farmer Credit, (Washington, D.C.: Agency for International Development, 1973).

TABLE 1. Average Propensities to Save of Farm Record Keeping Households
in Taiwan by Farm Size Groups 1960-1974

	1960	1962	1964	1966	1968	1970	1971	1972	1973	1974
<u>Farm Size Groups</u> ^{a/}	<u>-Average Propensities to Save-</u> ^{b/}									
.5 Hectares or Less	-.03	.09	.09	.19	.19	.15	.08	.19	.21	.17
.5 to 1.0 "	.15	.17	.22	.16	.23	.14	.16	.16	.23	.26
1.0 to 1.5 "	.14	.20	.27	.25	.25	.20	.23	.16	.27	.31
2.0 " or More	.27	.25	.29	.38	.36	.26	.24	.32	.28	.39
Average All Households	.19	.21	.23	.28	.28	.20	.19	.23	.27	.31
Total Number of Households	95	233	535	430	416	404	347	452	460	461

Source: Department of Agriculture and Forestry, Provincial Government of Taiwan, Report of Farm Record-Keeping Families in Taiwan, various years 1960-1974, published yearly by the Department of Agriculture and Forestry, Provincial Government of Taiwan, Nantou, Taiwan.

a/ One hectare equals 2.47 acres.

b/ The average propensity to save is equal to one minus the ratio of total household consumption/total net household income.

TABLE 2. Average Propensities to Save of Families in the Japanese Farm Household

Economy Surveys by Farm Size Groups 1950-1973

	1950	1955	1960	1965	1970	1971	1972	1973
<u>Farm Size Groups</u> ^{a/}	<u>-Average Propensities to Save-</u> ^{b/}							
.5 Cho or Less	.04	.07	.10	.14	.16	.17	.19	.23
.5 to 1.0 "	.07	.08	.08	.14	.14	.15	.18	.19
1.0 to 1.5 "	.10	.12	.11	.16	.14	.12	.19	.21
1.5 to 2.0 "	.13	.14	.13	.20	.14	.12	.16	.21
2.0 Cho or More	.16	.15	.17	.24	.19	.13	.24	.23
Average All Households	.10	.10	.11	.16	.15	.15	.19	.22
Total Number of Households	5,306	5,666	5,781	17,002	10,460	10,307	10,380	10,439

Source: Ministry of Agriculture and Forestry, Farm Household Economy Survey, Vol. 1, 1974 and Annual Report for Farm Household Economy Survey (1973), 1975, Ministry of Agriculture and Forestry, Tokyo, Japan (in Japanese).

a/ One cho is equal to approximately one hectare or 2.47 acres.

b/ The average propensity to save equals total disposable income minus gross household expenditures, including depreciation on households capital goods divided by total disposable income.

TABLE 3. Average Propensities to Save of Families in Korean Farm Household

Economy Survey by Farm Size Groups 1962-1974

	1962	1965	1966	1968	1970	1971	1972	1973	1974
<u>Farm Size Groups</u> ^{a/}	<u>-Average Propensities to Save-</u> ^{b/}								
.5 Cheongbo or Less	.05	-.05	.01	.06	.03	.17	.02	.15	.22
.5 to 1.0 "	.12	.01	.09	.11	.13	.24	.21	.19	.29
1.0 to 1.5 "	.16	.06	.10	.20	.16	.34	.34	.27	.35
1.5 to 2.0 "	.15	.12	.13	.23	.26	.35	.30	.34	.43
2.0 " or More	.22	.13	.23	.24	.19	.47	.30	.40	.40
Average All Households	.15	.04	.11	.16	.15	.29	.24	.26	.33
Total Number of Households	1,163	1,172	1,180	1,181	1,180	1,180	1,182	1,170	2,515

Source: Ministry of Agriculture and Fisheries, Republic of Korea, Report on the Results of Farm Household Economy Survey, various years 1962-1975, published yearly by the Ministry of Agriculture and Fisheries, Seoul, Korea.

a/ One cheongbo equals 0.992 hectares or 2.45 acres.

b/ The average propensity to save equals total farm household net surplus/total net disposable income.

TABLE 4. Rural Household Savings in West Malaysia by Occupation and Income Level Groups

Annual Income Groups ^{a/}	Occupational Groups			
	Farm Operators and Fishermen	Rural Employees	Mixed Operators and Employees	Rural Businessmen
	-Average Propensities to Save- ^{b/}			
Less than \$3,000	.01	.07	.08	.06
\$3001 to \$10,000	.12	.06	.43	.16
More than \$10,000	.46	-	-	-
All Income Groups	.06	.07	.12	.13
Total Number of Households	1433	1433	87	84

Source: Lee Hock Lock, Household Saving in West Malaysia and the Problem of Financing Economic Development, Monograph Series on Malaysian Economic Affairs, Faculty of Economics and Administration, University of Malaya, Kuala Lumpur, 1971, pp. 54-57.

^{a/} Expressed in Malaysian dollars. In 1970, 3.09 Malaysian dollars equalled one dollar U.S.

^{b/} Total household savings divided by total household net income.

TABLE 5. Average Propensities to Save of 180 Farm Households in Two Districts
of Punjab, India by Farm Size Groups 1966-67 - 1969-70

Farm Size ^{a/}	-Ludhiana District-				-Hissar District-			
	1966-67	1967-68	1968-69	1969-70	1966-67	1967-68	1968-69	1969-70
	-Average Propensities to Save- ^{b/}							
Small	.02	.06	.06	.17	.01	.09	.34	.34
Medium	.17	.23	.30	.26	.21	.21	.38	.36
Large	.18	.22	.28	.25	.09	.17	.37	.31
Average	.14	.20	.25	.24	.12	.18	.37	.34
Total Number of Households	72	72	72	72	108	108	108	108

Source: A. S. Kahlon and Harbhajan Singh Bal, "Factors Associated with Farm and Farm Family Investment Pattern in Ludhiana (Punjab) and Hissar (Haryana) Districts, 1966-67 through 1969-70," unpublished report, Department of Economics and Sociology, Punjab Agricultural University, Ludhiana, Punjab, India, no date, but circa 1971, p. 116.

a/ In Ludhiana, small units had less than 3.5 hectares, medium sized units 3.5 to 6.0 hectares, and large units more than 6 hectares. In Hissar, small units had less than 4 hectares, medium sized units 4 to 8 hectares, and large units more than 8 hectares. One hectare equals 2.47 acres.

b/ Average propensity to save is the ratio of net farm family savings and net farm family income.